

LISTING OF THE CLAIMS

A complete listing of the claims is provided below. This listing of claims will replace all prior versions and listings of claims in the application.

1. (Cancelled)

2. (Cancelled)

3. (Cancelled)

4. (Currently Amended) ~~An apparatus according to claim 3,~~ An apparatus for sealing between a rotating shaft and a fixed housing, comprising:

a rotating seal having a first face, mounted for rotation with the shaft;

a non-rotating trapped seal ring having a second face sliding contact with the first sealed face and biased towards the first face by a spring;

a gland fixedly mounted to the housing so that the spring is located between the gland and the trapped seal ring;

a ball disposed between the trapped seal ring and the gland and providing a lock against rotation so that the trapped seal ring remains rotationally fixed relative to the fixed gland;

a first indentation and the trapped seal ring further comprises a second indentation, and wherein the ball is trapped between the first and second indentations; and

a port extending through the gland and permitting insertion of the ball from outside the gland into the region defined by the first and second indentations when the spring is compressed to a first degree,

wherein when the spring is compressed to the first degree, insertion of the ball is permitted, and when the spring is uncompressed so that the first face contacts the second face, degree removal of the ball is prevented.

5. (Currently Amended) An apparatus according to claim ~~4~~ 4, wherein the trapped seal ring is made from tungsten carbide.

6. (Cancelled)

7. (Cancelled)

8. (Cancelled)

9. (Currently Amended) ~~An apparatus according to claim 8,~~ A scraped surface heat exchanger apparatus comprising:

a rotating shaft;

a fixed housing;

a rotating seal having a first face, mounted for rotation with the shaft;

a non-rotating trapped seal ring having a second face in sliding contact with the first sealed face and biased towards the first sealed face by a spring;

a gland fixedly mounted to the housing so that the spring is located between the gland and the trapped seal ring, wherein the gland further comprises a first indentation and the trapped seal ring further comprises a second indentation, and wherein the ball is trapped between the first and second indentations;

a ball disposed between the trapped seal ring and the gland and providing a lock against rotation so that the trapped seal ring remains rotationally fixed relative to the fixed gland; and

a port extending through the gland and permitting insertion of the ball from outside the gland into the region defined by the first and second indentations when the spring is compressed to a first degree,

wherein when the spring is compressed to the first degree, insertion of the ball is permitted, and when the spring is uncompressed so that the first face contacts the second face, removal of the ball is prevented.

10. (Original) An apparatus according to claim 5, wherein the trapped seal ring is made from tungsten carbide.

11. (Cancelled)

12. (Cancelled)

13. (Cancelled)

14. (Currently Amended) ~~An apparatus according to claim 13,~~ An apparatus for sealing between a rotating shaft and a fixed housing, comprising:

a rotating sealing means having a first face mounted for rotation with the shaft;

a non-rotating sealing means trapped seal ring having a second face and sliding contact with the first face and biased towards the first face by a spring;

a gland fixedly mounted to the housing so that the housing means is located between the gland and the trapped seal ring, wherein the gland further comprises a first indentation and the trapped seal ring further comprises a second indentation, and wherein the locking means comprises a ball trapped between the first and second indentations;

locking means disposed between the trapped seal ring and the gland and providing a lock against rotation so that the trapped seal ring remains rotationally fixed relative to the fixed gland;
and

a port extending through the gland and permitting insertion of the ball from outside the gland into the region defined by the first and second indentations,

wherein when the spring is compressed, insertion of the ball is permitted, and when the spring is uncompressed to some degree removal of the ball is prevented.

15. (Currently Amended) An apparatus according to claim ~~11~~ 14, wherein the trapped seal ring is made from tungsten carbide.

16. (Cancelled)

17. (Currently Amended) ~~The apparatus according to claim 16~~ The method according to claim 18, wherein a port extends through the gland to permit insertion of the ball from outside the gland into the region defined by the first and second indentations.

18. (Currently Amended) ~~An apparatus according to claim 16~~, A method for a sealing between a rotating shaft and fixed housing, comprising:

biasing a non-rotating seal face into sliding contact against a seal face rotating with the shaft using a spring; and

locking the non-rotating seal face against rotation by insertion of a ball trapped between an indentation in a trapped seal ring and an indentation in a gland attached to the housing,

wherein when the spring is compressed, insertion of the ball is permitted, and when the spring is uncompressed to some degree removal of the ball is prevented.

19. (Cancelled)

20. (Cancelled)